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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/555,401

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EXAMINER

ROSE, KERRI M

ART UNIT

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08/17/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/555,401	Applicant(s) RADULESCU ET AL.	
	Examiner KERRI M. ROSE	Art Unit 2474	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 July 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-11, 13, 15, 16, 18 and 20 is/are allowed.
- 6) ☒ Claim(s) 1,2,4-8,12,14,17 and 19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 07/01/2010 have been fully considered but they are not persuasive. Oskouy discloses signal timing diagrams in figures 5a/b and 6a/b for the respective first and second handshake procedures. The figures illustrate at least a partial overlap in the timing of the signals, i.e. they are at least partially simultaneous. Col. 7 lines 44-57 also describes that the second handshake may overlap in time with the first handshake.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 4, 8, 12, 14, and 19 are rejected under 35 U.S.C. 103(a) as being anticipated by Oskouy et al. (US 5,745,684) in view of Carlson et al. (US 2006/0120282).

4. In regards to claim 1, Oskouy discloses a method for exchanging data between a first (Figure 4a element 20 discloses a system bus interface as a functional unit) and a second (Fig. 4a element 22 discloses a system core as a functional unit) function unit, comprising the following steps:

in a first handshake procedure (fig. 4a.60 discloses read/write control handshake data), data is exchanged corresponding to a communication thread selected by the first function unit (Column 6 lines 26-30 disclose the control data includes information such as the read address and the write address. The addresses correspond to the communication thread.),

while independently in a second handshake procedure (fig. 4a.62 discloses read/write data handshake, which is independent from the control handshake procedure.),

information relating to a status of at least one communication thread is exchanged from the second to the first functional unit (Column 6 lines 8-12 disclose buffer fill data may be exchanged.) characterized in that the information enables the first functional unit to anticipate the possibility of exchanging data for the at least once communication thread (Col. 6 lines 12-14 indicates the buffer fill information allows for faster data flow. Therefore the functional unit uses the buffer fill information to anticipate and schedule data exchanges quickly.), and wherein the first handshake procedure and the second handshake procedure occur at least partially simultaneously (Fig 5a/b discloses a signal timing diagram for the first handshake. In it the handshake procedure is asserted during at least pulses 2-7 of the mclk. Fig. 6a/b discloses a signal timing diagram for the second handshake. In it the handshake procedure is asserted during at least pulses 3-5 of the mclk. Additionally col. 7 lines 44-57 describes at least partial simultaneous operation of the first (control) handshake and second (data) handshake procedures.).

Oskouy is silent to wherein the information is indicative of how often new data is to be provided.

Carlson discloses exchanging information indicating how often new data is to be provided or expected (Paragraph 203 describes a process which collects data as to the "frequency of occurrence" of a data flow. The frequency of occurrence is akin to how often the data is sent. Paragraph 204 describes using the collected data to make predictions about the future resource needs based upon in part how often the data flow is expected to send data.).

It would have been obvious to one of ordinary skill in the art at the time of the invention to predict how often data will be sent, as disclosed by Carlson, in the data exchange taught by Oskouy because doing so helps to ensure the best use of resources by allowing for lookahead scheduling and balanced loads, as taught by Carlson in paragraph 24.

5. In regards to claim 2, Oskouy discloses the method according to claim 1, wherein the information is indicative for the filling degree of a buffer reserved for the at least one communication thread (Column 6 lines 8-12 disclose buffer fill data may be exchanged.).

6. In regards to claim 4, Oskouy discloses a system for exchanging data between a first (Figure 4a element 20 discloses a system bus interface as a functional unit) and a second (Fig. 4a element 22 discloses a system core as a functional unit) function unit, comprising the following steps:

in a first handshake procedure (fig. 4a.60 discloses read/write control handshake data), data is exchanged corresponding to a communication thread selected by the first function unit (Column 6 lines 26-30 disclose the control data includes information such as the read address and the write address. The addresses correspond to the communication thread.),

while independently in a second handshake procedure (fig. 4a.62 discloses read/write data handshake, which is independent from the control handshake procedure.),

information relating to a status of at least one communication thread is exchanged from the second to the first functional unit (Column 6 lines 8-12 disclose buffer fill data may be exchanged.) characterized in that the information enables the first functional unit to anticipate the possibility of exchanging data for the at least once communication thread (Col. 6 lines 12-14 indicates the buffer fill information allows for faster data flow. Therefore the functional unit

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uses the buffer fill information to anticipate and schedule data exchanges quickly.) and wherein the first handshake procedure and the second handshake procedure occur at least partially simultaneously (Fig 5a/b discloses a signal timing diagram for the first handshake. In it the handshake procedure is asserted during at least pulses 2-7 of the mclk. Fig. 6a/b discloses a signal timing diagram for the second handshake. In it the handshake procedure is asserted during at least pulses 3-5 of the mclk. Additionally col. 7 lines 44-57 describes at least partial simultaneous operation of the first (control) handshake and second (data) handshake procedures.).

Oskouy is silent to wherein the information is indicative of how often new data is to be provided.

Carlson discloses exchanging information indicating how often new data is to be provided or expected (Paragraph 203 describes a process which collects data as to the "frequency of occurrence" of a data flow. The frequency of occurrence is akin to how often the data is sent. Paragraph 204 describes using the collected data to make predictions about the future resource needs based upon in part how often the data flow is expected to send data.).

It would have been obvious to one of ordinary skill in the art at the time of the invention to predict how often data will be sent, as disclosed by Carlson, in the data exchange taught by Oskouy because doing so helps to ensure the best use of resources by allowing for lookahead scheduling and balanced loads, as taught by Carlson in paragraph 24.

7. In regards to claim 8, Oskouy and Carlson disclose the method of claim 1, further comprising the act of ordering transactions within the communication thread so that requests from the first functional unit are executed by the second functional unit in a same order as the

requests were issued by first function unit and response from the second functional unit are delivered in the same order as request for the responses were issued by the first functional unit (Carlson discloses using TCP packets in paragraphs 188 and 190. TCP packets include sequence numbers which are used to ensure packets are processed and responded to in the order in which the request was made even if the packets are received out of order.).

8. In regards to claim 12, Oskouy and Carlson disclose the method of claim 1, further comprising the acts of: providing a valid signal announcing request of the information about the at least one communication thread (Oskouy col. 7 lines 30 and 31 disclose asserting a read request signal to announce a request of information.); and keeping the valid signal high until the information is provided (Oskouy col. 7 lines 52-57 disclose the signal remains asserted [i.e. high] until the information is provided.).

9. Claims 14 and 19 are rejected upon the same grounds as claims 8 and 12 respectively.

10. Claims 5 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oskouy et al. (US 5,745,684) in view of Carlson et al. (US 2006/0120282) further in view of Wingard (US 6,182,183).

11. In regards to claim 5, Oskouy discloses the system according to claim 4 comprising a plurality of functional units in a network (fig. 4a elements 20 and 22 are functional units), the processing system being arranged to transmit data and a communication thread identifier for said data (Fig. 4a. 60 and 62 are independent handshake procedures for transmitting data and a thread identifier.) along a communication path (Fig. 3 discloses the plurality of functional units are connected by a communication path. The path is represented by unlabeled arrows.) from a

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source functional unit (Figure 3.48 discloses a host as the source functional unit) to a destination functional unit (Fig. 3.40 discloses a cell interface as the destination functional unit) via one or more intermediate functional units, including a first functional unit (Fig. 3.20 represents the first functional unit) and a second functional unit (Fig. 3.22 represents the second functional unit).

Oskouy is silent as to whether the data is transmitted accorded to a split protocol.

Wingard discloses using a split protocol in column 2 lines 18-25.

It would have been obvious to one of ordinary skill in the art at the time of the invention to implement a split protocol, as taught by Wingard, in the system of Oskouy because a split protocol helps allow for large, complex systems to interoperate efficiently regardless of their performance requirements, as taught by Wingard in column 2 lines 39-51.

12. In regards to claim 17, Oskouy and Carlson disclose the processing system of claim 5, wherein the split protocol is configured to allow the source functional unit to have multiple outstanding requests that waiting for a response from the destination functional unit (Oskouy discloses allowing for multiple outstanding requests in col. 7 lines 49-51.).

13. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being anticipated by Oskouy et al. (US 5,745,684) in view of Carlson et al. (US 2006/0120282) further in view of Wyland (US 2003/0065862).

14. In regards to claim 6, Oskouy and Weddle disclose the method of claim 1 but are silent to wherein the information is indicative for an expected waiting time before a request relating to the at least one communication thread can be handled.

Wyland discloses exchanging a wait or back-off time in paragraph 17.

It would have been obvious to one of ordinary skill in the art at the time of the invention to exchange as wait time, as taught by Wyland, in the exchange method taught by Oskouy because doing so minimizes traffic due to resends, as taught by Wyland in paragraph 8.

15. Claim 7 is rejected upon the same grounds as claim 6.

Allowable Subject Matter

16. Claims 9-11, 13, 15, 16, 18, and 20 are allowed.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KERRI M. ROSE whose telephone number is (571) 272-0542.

The examiner can normally be reached on Monday through Thursday, 6 am - 3 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Aung MOE can be reached on (571) 272-7314. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Aung S. Moe/
Supervisory Patent Examiner, Art Unit 2474

/Kerri M Rose/
Examiner, Art Unit 2474